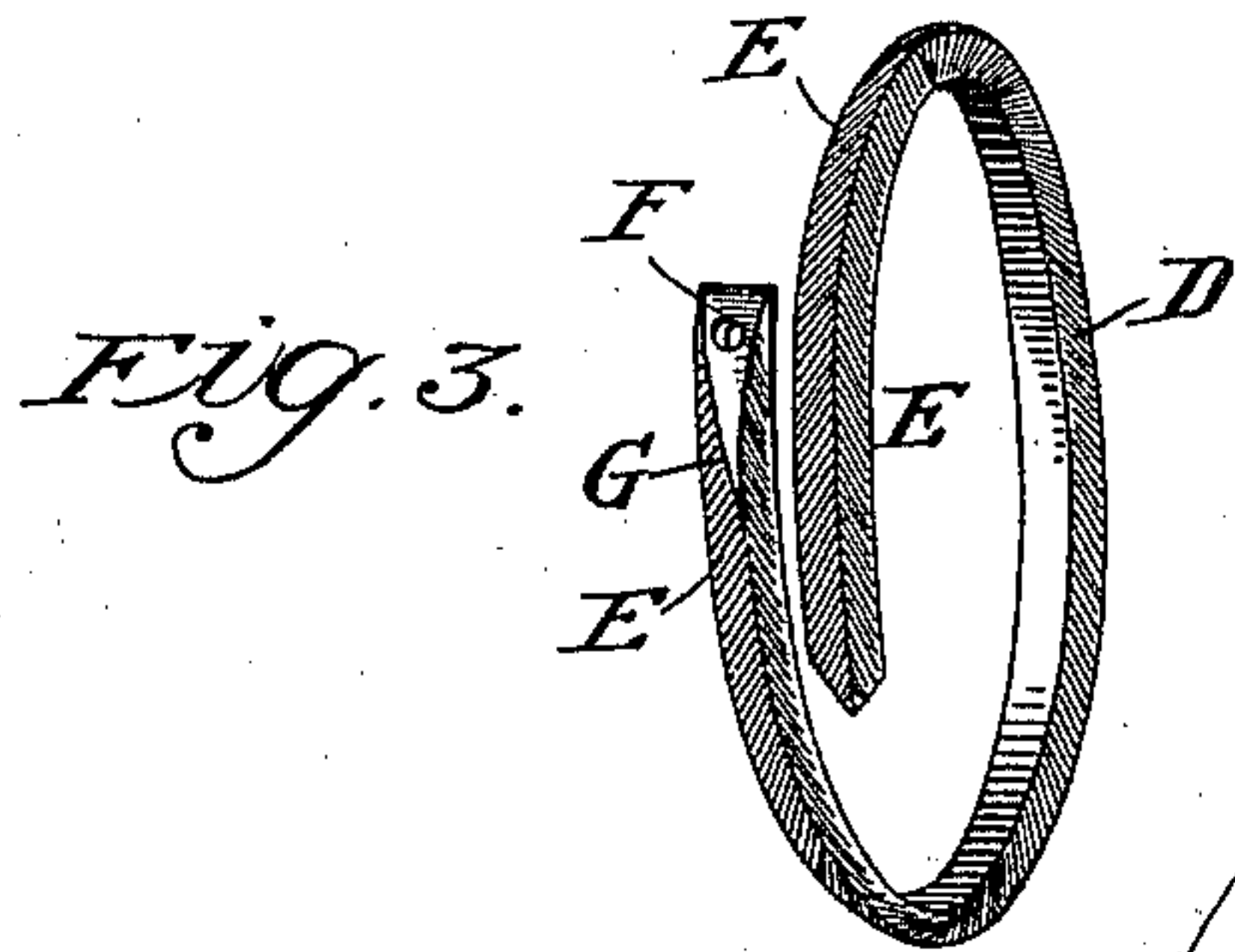
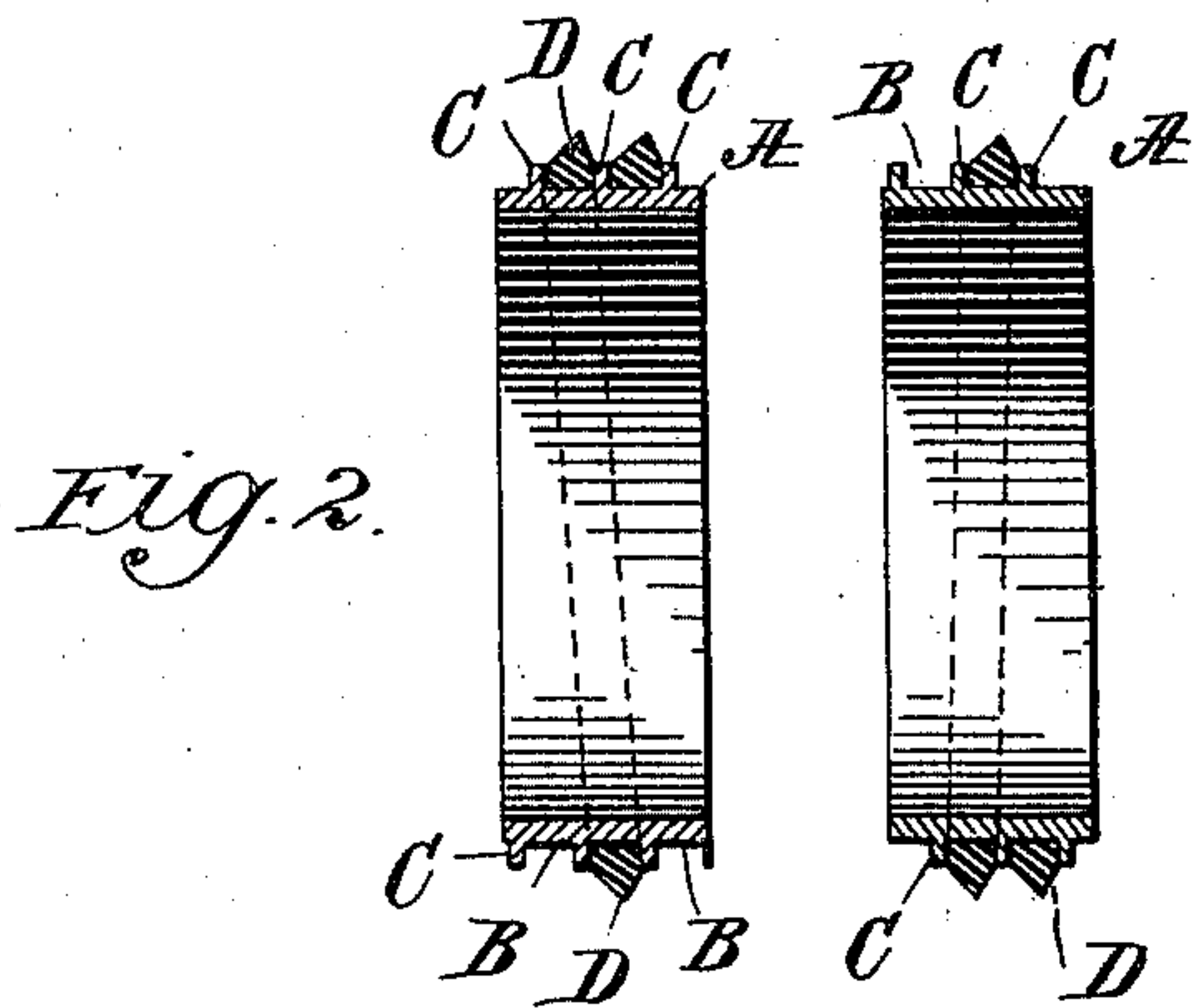
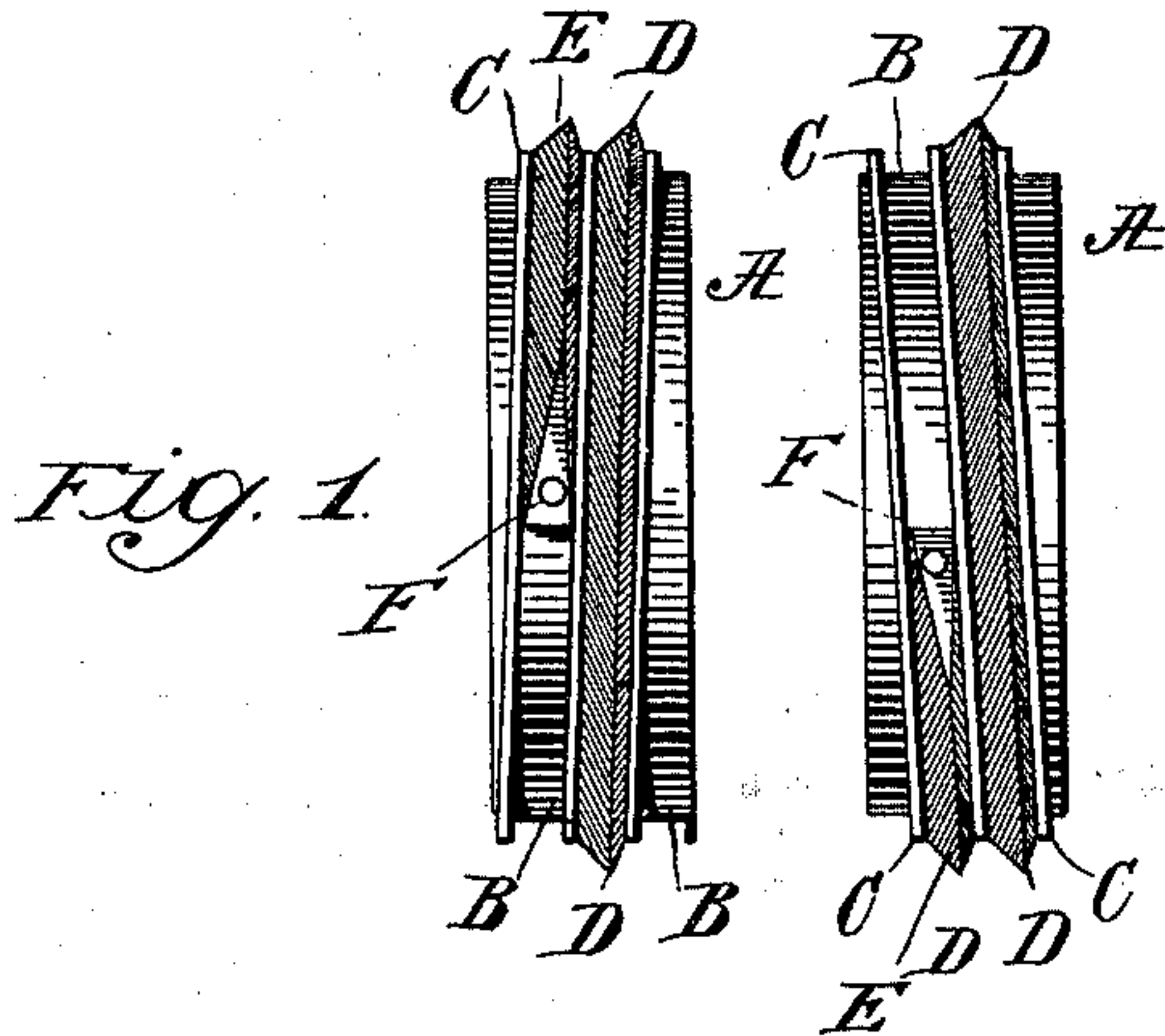


(No Model.)

H. L. MORRELL.
SPIRAL FILE FOR SAW FILING MACHINES.

No. 598,268.

Patented Feb. 1, 1898.



Witnesses
Edward Bowland,
E. Simpson.

Henry L. Morrell
Inventor
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UNITED STATES PATENT OFFICE.

HENRY L. MORRELL, OF BROOKLYN, NEW YORK.

SPIRAL FILE FOR SAW-FILING MACHINES.

SPECIFICATION forming part of Letters Patent No. 598,268, dated February 1, 1898.

Application filed April 3, 1897. Serial No. 630,560. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. MORRELL, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Spiral Files for Saw-Filing Machines, of which the following is a specification.

My invention relates to improvements in spiral files for saw-filing machines. These devices are intended to be used in conjunction with a machine for filing saws or filing and setting saws such as that heretofore invented by me and patented in United States Letters Patent dated November 3, 1896, and numbered 570,732, by reference to which the location of the spiral files in the machine and the parts and their coactive relationship will at once appear.

Generally stated, the invention consists in a strip or piece of steel of the proper shape and length coiled upon itself spirally, the inner portion of which is preferably flattened and has right angles at its corners, and the outer portion of which is given the contour or shape of the teeth to be filed, and upon the outer portions are cut the file-teeth at such an inclination (right and left) as to effect the proper filing of the saw, since the files in the machine are used in pairs, one turning to the right and the other to the left, so as to properly file the teeth, which have the right and left inclination, respectively, and these spiral files are adapted to screw into spiral grooves upon the exterior surface of metallic sleeves, so that the files will be firmly held in them, and they are attached to the sleeve at their forward end only. The rear end being left free adjusts itself as circumstances may require. The forward end of the spiral file adjacent to the place where it is attached is preferably tapered toward the end in all directions, so that it will enter the teeth of the saw to be filed in a gradual, smooth, sliding manner, and the full bearing of the file upon the teeth will not take place until, say, one-sixth or one-fifth has passed by the teeth.

Among the special advantages secured by me are the security with which the files are held upon the sleeves, the ease with which they may be engaged with the sleeves, the fact that expansion and contraction either of

the sleeve or of the files has no effect upon the latter, because they are attached at one place only, and the fact that the rear end of the file has independent movement, so that it can adapt itself to exactly the pressures exerted upon it, and also the fact that movement longitudinally of the sleeve is precluded because of the groove in which the files are supported, which is made to exactly coincide with the shape and size of the files themselves.

Referring to the drawings, Figure 1 illustrates an edgewise elevation of a pair of files made under my invention, they being right and left, respectively, as shown. Fig. 2 illustrates a vertical sectional view of that which is shown in Fig. 1. Fig. 3 illustrates a perspective of one of the spiral files detached from its sleeve.

A A are the metallic ring-like sleeves. They are cylindrical in shape, as shown, and are adapted to fit the rotary blocks in the machine, in conjunction with which they are used. (See my former patent.)

B B are spiral grooves cut in the exterior of the sleeves, having strong spiral ribs C C at each side, which firmly hold the files in place.

D D are the files themselves. As shown in Fig. 3, they are somewhat extended strips of metal which are flattened upon their surfaces which engage with the grooves B in the sleeves, and their exterior surfaces, as seen best in Fig. 1, are inclined at both sides, so as to form a circumferentially-running edge, the contour of this part of the files being that of the teeth which are to be filed. This machine being used by me principally for sharpening butchers' saws, there is a single form of tooth only required, since the teeth of all butchers' saws, or substantially all, have one and the same shape or contour. Upon these inclined edges file-teeth are cut, as shown at E E.

Near the forward end of the files a hole F is bored, through which a pin passes which fastens this front end to the sleeve, and at that end, as shown at G, Fig. 3, the file is sharpened by grinding off a portion of its end, and likewise it is not made quite so thick radially as at its other portions, so that it slides gradually into the tooth to be cut. The distance through which the reduced thickness extends

is only an inch and a half, (depending upon the size of the file,) and from that on throughout the rest of the convolution or convolutions the file is of a uniform thickness.

5 The files and sleeves are of course made separately, and the files after having been duly cut are tempered in the desired shape. They are then threaded upon the sleeves by screwing them along and into the spiral
10 grooves in the exterior surface of the sleeves until the hole F engages with the corresponding hole in the sleeve, whereupon a rivet or small screw is employed to fasten the parts together. The file is not fastened to the
15 sleeve at any other place, excepting so as to prevent it from movement by the lateral ribs C C on the sleeves, so that it may expand and contract and may move toward and from the sleeve as necessity requires. In this way all
20 distortion of the parts and jamming of the file in the teeth of the saw are avoided and their operation in the machine is smooth, accurate, and reliable, and in the event of fracture of a file it is a very simple matter to replace it
25 with another one. Indeed, I manufacture and sell these files in pairs, so that a single pair of sleeves may be used for a hundred pairs of files, more or less.

It will be obvious to those who are familiar with such matters that the files may be made 30 of any desired length, so that instead of making a single spiral convolution with suitable overlapping of the ends, as shown, they may be sharper and longer.

I claim— 35

1. A filing device for saw-filing machines, consisting in a metallic sleeve having a spiral groove cut in its exterior surface, and a continuous, spiral file adapted to rest in said groove, the parts whereof which engage with 40 it being of substantially the same shape, and the exterior surface of the file being shaped to conform to the teeth to be filed, for the purposes set forth.

2. A saw-filing device embodying a metallic 45 sleeve having a spiral groove formed in its exterior surface, and a continuous, spiral file threaded in the said groove and fastened therein at one point only, for the purposes set forth.

Signed at New York, in the county of New 50 York and State of New York, this 26th day of March, A. D. 1897.

HENRY L. MORRELL.

Witnesses:

PHILLIPS ABBOTT,
A. B. MORRISON.